

# 2005 Compensatory Mitigation Monitoring Report

**L.E. CARPENTER & COMPANY**

***170 North Main Street  
Block 301, Lot 1 and Block 801, Lot 3  
Borough of Wharton  
Morris County, New Jersey***

**NJDEP File #1439-04-0001.1**

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**JFNew Project #040229**



## TABLE OF CONTENTS

<b>INTRODUCTION.....</b>	<b>1</b>
<b>MONITORING .....</b>	<b>2</b>
<b>METHODS .....</b>	<b>2</b>
<b>VEGETATIVE COMMUNITY .....</b>	<b>3</b>
Table 1. A summary of species diversity in the emergent zone.....	3
Table 2. A summary of species diversity in the forested/scrub-shrub zone..	3
Table 3. A summary of species diversity in the transition zone. ....	3
<b>MAINTENANCE .....</b>	<b>4</b>
<b>HYDROLOGY AND WATER QUALITY .....</b>	<b>4</b>
<b>WILDLIFE HABITAT.....</b>	<b>5</b>
Table 4. Comprehensive list of wildlife observations in the mitigation wetland. ....	5
<b>SOILS .....</b>	<b>5</b>
Table 5. Soil profile review.....	5
<b>SEDIMENTATION AND EROSION CONTROL.....</b>	<b>6</b>
<b>CONCLUSIONS .....</b>	<b>6</b>
<b>REFERENCES.....</b>	<b>6</b>

## FIGURES

Figure 1:	Location Map
Figure 2:	USGS Topographic Map
Figure 3:	Aerial Photograph
Figure 4:	Mitigation Monitoring Map

## APPENDICES

Appendix A:	Planting List
Appendix B:	Wetland Data Sheets
Appendix C:	Photographs of Wetland Development
Appendix D:	NJDEP Permit 1439-04-0001.1



## **INTRODUCTION**

L.E. Carpenter & Company (LEC) implemented a Remedial Action Work Plan (RAWP) for the impacted portion of their  $\pm$  14.6-acre site (approximately 4.7 acres of disturbed area) located at 170 North Main Street, Borough of Wharton, Morris County, New Jersey (Figure 1). The site comprises Block 301, Lot 1 and Block 703, Lot 30 on the Borough of Wharton tax map. The project area is located in the USGS Dover, New Jersey quadrangle with center state plane coordinates of N 754326.5 E 470891.83 (NAD 1983) (Figure 2). A 2002 aerial photograph of the project site is also included (Figure 3).

Due to the parcel's previous utilization for mining and forging throughout the 1700's and 1800's, and vinyl manufacturing from 1943 to 1987, contaminated soils and groundwater were identified on the site. RMT, Inc. (RMT), on behalf of LEC, worked with the U.S. Environmental Protection Agency (USEPA) and the New Jersey Department of Environmental Protection (NJDEP) to implement the RAWP for those impacted areas of the property.

As part of the RAWP, several "Hot Spots" (areas exhibiting either inorganic or organic contaminant concentrations in soil in excess of the 1994 Record of Decision (ROD) cleanup criteria) were identified across the site for removal. Several areas identified for contaminant removal overlapped with jurisdictional wetlands on site. A total of 0.337 acre of jurisdictional wetlands was temporarily impacted as a result of site remediation activities (Figure 4). This acreage consisted of a 0.003 acre and 0.009 acre lobe of forested/scrub-shrub wetland on site, 0.286 acre of forested/scrub-shrub and emergent marsh wetland to the east on the Wharton Enterprise property, and 0.039 acre of the Air Products open-water drainage channel relocation to the northeast. Due to the fact that project activities and wetlands extend off site onto adjacent properties, the project area or site referenced in this plan includes the LEC parcel, several acres of the Wharton Enterprises parcel to the east, and the Air Products drainage channel to the northeast.

Upon completion of cleanup activities, the entire 0.337 acre of wetland disturbance was restored and enhanced as more diverse emergent wetland communities. All temporary wetland impacts were restored and mitigated for at their current locations. A Wetland Mitigation Construction Final Report, dated August 28, 2005, was submitted to the NJDEP upon completion of restoration activities.

The main source of hydrology for the restored wetland is a direct surface water flow from the Rockaway River. The wetland area was restored to pre-cleanup grades. The intention was to restore and enhance the pre-existing wetland so that there is no-net loss of wetlands as a result of the clean-up work completed by LEC.

The primary means through which wetland vegetation will be established in the mitigation area is through planting native seed and bare root stock trees, as well as natural colonization from the adjacent wetland areas. For a list of planted species within the mitigation area and transition zone, see Appendix A.



## **MONITORING**

Annual monitoring of the mitigation area is proposed for five years, unless it is apparent the wetland has been successfully established sooner, upon which case the permittee will propose elimination of any subsequent reports in writing to the NJDEP. Only upon written concurrence from the NJDEP will any reporting requirements be eliminated.

LEC will submit annual reports to the NJDEP by December 31 of each monitoring year in accordance with the requirements outlined in the NJDEP Mitigation Project Monitoring Reports Checklist for Completeness. The monitoring reports will, at a minimum, include the following:

1. Photographs of the wetland mitigation areas.
2. Assessment of vegetative communities and evaluation of whether a dominance of wetland species exists (according to federal wetland indicator status of species identified).
3. Wildlife utilization evaluation.
4. Hydrology evaluation.
5. Soil evaluation.
6. Sediment loading evaluation.
7. Evaluation of sideslope and transition area conditions. Evaluation of overall progress toward successful achievement of wetland creation as designed, per each of the performance standards dictated for the project. Perform a comparative assessment between existing conditions and the performance standards.

This document will serve as the first annual monitoring report.

## **METHODS**

A thorough review of the mitigation site was completed on October 3, 2005. Conditions were sunny and warm. The wetland was walked using the random meander method. All plant species encountered during the walk-through were recorded on inventory data sheets until no new plant species were observed (Appendix B). Plant names were used as listed in Gleason and Cronquist (1991).

Three permanent transect were set up in order to measure percent cover of vegetation in the wetland (Figure 4). Several 1-m<sup>2</sup> plots were laid along the transect in order to measure the vegetative cover. A percent cover value was assigned to each species found in the plots. Total vegetative cover was calculated by averaging the vegetative cover from each plot along the transect (Appendix B).

Information on hydrology was collected using evidence provided by soil pits. Permanent reference points were established at the beginning of the transects so that water levels can be recorded in the same location from year-to-year. The site was also inspected for problems such as erosion, sedimentation, and water quality issues. Signs of wildlife use were also recorded



during the walk-through. Finally, reference points were established from which to take photographs.

### **VEGETATIVE COMMUNITY**

The data from the plots was used to describe the vegetative cover. Of the total wetland and transition areas, an average of 74% was vegetated and the remaining 26% was bare soil.

**Table 1. A summary of species diversity in the emergent zone.**

Year	Total # Species	# Native Wetland Indicator Species	# Native Species
2005	49	19 (39%)	29 (59%)

**Table 2. A summary of species diversity in the forested/scrub-shrub zone.**

Year	Total # Species	# Native Wetland Indicator Species	# Native Species
2005	51	23 (45%)	34 (67%)

**Table 3. A summary of species diversity in the transition zone.**

Year	Total # Species	# Native Wetland Indicator Species	# Native Species
2005	37	7 (19%)	19 (51%)

The following invasive species were observed in small numbers within the mitigation wetlands during the initial monitoring visit: reed canary grass (*Phalaris arundinacea*), purple loosestrife (*Lythrum salicaria*), and giant reed (*Phragmites australis*). These species will be selectively treated using wetland-approved herbicides. Annual treatments will be performed twice each year through September 2009, or until all invasive populations have been effectively controlled.

Widespread mortality of the planted bareroot trees and shrubs was noted during the 2005 site visit. Late season installation (June 28), severe drought conditions throughout the 2005 growing season, and possibly deer predation, were likely contributors to the death of many of the installed trees. A replant of 250 bareroot trees is recommended to encourage sufficient coverage to meet mitigation requirements. It is recommended that this supplemental planting take place during the spring 2006 monitoring visit (April or May).

Much of the vegetation encountered in the wetland zones is comprised of upland weedy species (non-invasive). While some delay between seed installation and native vegetation establishment is anticipated, the absence of most seeded species at the end of the first growing season is a potential concern regarding the successful long-term development of the wetland communities. Drought conditions may have adversely affected the native seed, resulting in lower than expected germination rates. Future monitoring visits will include further assessment of the development



of native wetland vegetation at the site, and allow us to determine whether re-seeding will be necessary.

Six tree species were found in the mitigation area, including red maple (*Acer rubrum*), silver maple (*Acer saccharinum*), silky dogwood (*Cornus amomum*), green ash (*Fraxinus pennsylvanica*), black walnut (*Juglans nigra*), and pussy willow (*Salix discolor*). There were originally 375 tree/shrub species planted in the mitigation area. During the site visit, a count was made of all the surviving tree/shrub seedlings and 32 were found to be alive. This results in a 9% survival rate of planted trees and shrubs. Species specific survival numbers are present on the data sheets (Appendix B).

### **MAINTENANCE**

Invasive or noxious vegetation can oftentimes prevent or hinder the successful establishment of native species in a wetland mitigation area. For this reason, a routine wetland maintenance program is being implemented at the LEC project site. This program includes semi-annual site visits to assess and treat (if necessary) any invasive species found on the property. Based on knowledge of the site and adjacent communities, chemical applications have been selected as the most effective maintenance tool for control of invasive species.

Any potential browsing damage by herbivores will be noted and addressed during routine maintenance site visits. Should the need arise, deer or goose fencing will be erected around the seeded areas to promote growth and restrict grazing or browsing.

Subsequent to permit issuance and after the restored wetland areas had been planted, several federal agency personnel raised a concern over the use of barnyard grass (*Echinochloa crusgalli*) in the wetland restoration seed mix. Due to the fact that several respected botanical sources disagree on the status of barnyard grass as a native versus non-native species, it was decided that barnyard grass populations on the project site will be monitored. If at any time it is determined that barnyard grass is having a detrimental effect on the mitigation area or prohibiting the establishment of other native species, it will be effectively controlled during the semi-annual maintenance site inspections. At this time, barnyard grass does not appear to be a long-term concern.

### **HYDROLOGY AND WATER QUALITY**

The 2005 growing season was exceptionally dry, and many naturally occurring wetlands in the area were drier than normal. There was no area within the mitigation wetland that was inundated with water. At the eastern end of the emergent zone transect, a soil pit was dug to inspect hydrology. During the October site visit, the soil was saturated in this region at a depth of 20" below the surface. At the eastern end of the forested zone transect, the soil was saturated 6" below the surface.



## **WILDLIFE HABITAT**

Evidence of wildlife use was present in the mitigation wetland. Numerous bird species were identified during the site visit, as well as one mammal and one amphibian species. As the mitigation site progresses and the wetland vegetation becomes dominant, it is expected that the wildlife observations will continue to increase, and the desired goal of creating wildlife habitat within the mitigation area will be achieved. There were also 3 trees along the south border of the forested zone that unexpectedly blew over into the wetland (Appendix C, Photo 9). This should be beneficial to the wetland development as it provides a more diverse structural community within the mitigation area and provides immediate habitat for wildlife.

**Table 4. Comprehensive list of wildlife observations in the mitigation wetland.**

SCIENTIFIC NAME	COMMON NAME
<b>BIRDS</b>	
<i>Cyanocitta cristata</i>	Blue jay
<i>Buteo jamaicensis</i>	Red-tailed hawk
<i>Branta canadensis</i>	Canada goose
<i>Zenaida macroura</i>	Mourning dove
<i>Colaptes auratus</i>	Northern flicker
<b>AMPHIBIANS</b>	
<i>Rana clamitans</i>	Green frog
<b>MAMMALS</b>	
<i>Odocoileus virginianus</i>	White-tailed deer

## **SOILS**

During the October 2005 site visit, soil characteristics and textures were not specifically examined due to the fact that this had previously been done in June 2005. Results of the soil profile review were presented in the Wetland Mitigation Construction Final Report, dated August 28, 2005, and are again presented below.

**Table 5. Soil profile review.**

	Soil Depth	Munsell Soil Color	Soil Texture
Boring 1 (40.54.15.00748N 74.34.31.41719W)	0-10"	10YR 4/3	Loam
	10-20"	10YR 3/3	Loam
Boring 2 (40.54.14.42438N 74.34.31.14259W)	0-13"	10YR 4/2	Loamy clay
	13-20"	10YR 3/2	Loamy clay
Boring 3 (40.54.13.75148N 74.34.31.31904W)	0-15"	10YR 4/3	Loam
	15-20"	10YR 3/1	Loamy clay



	Soil Depth	Munsell Soil Color	Soil Texture
Boring 4 (40.54.13.94790N 74.34.29.98567W)	0-2" 2-20"	10YR 4/3 10YR 3/2	Loam Loam
Boring 5 (40.54.14.63046N 74.34.29.45719W)	0-9" 9-20"	10YR 4/3 10YR 3/2	Loam Loam
Boring 6 (40.54.12.80847N 74.34.34.70682W)	0-20"	10YR 3/3	Loam

### **SEDIMENTATION AND EROSION CONTROL**

There were no signs of erosion problems on the day the site was investigated. The potential for erosion issues exist due to the fact that 26% of the area remains unvegetated. It is expected that after the spring planting, an increase in vegetative cover will be sufficient to stabilize any remaining bare soil.

### **CONCLUSIONS**

The mitigation area began during a stressful year. The numbers of native and wetland species within the mitigation area were not as high as desired. However, due to extremely dry conditions and the fact that the site was planted less than one year ago, these preliminary results may be expected. When the mitigation wetland is finally able to experience spring hydrological events, it will provide a suitable environment for the germination of wetland species seeds, and the process of wetland restoration will be fully underway.

At this time, it is recommended that LEC proceed with the following steps.

1. Planting at least 250 additional bareroot trees in the spring of 2006
2. Continue maintenance visits for invasive species control to eliminate or effectively control their presence in the wetland mitigation area. LEC currently has a 5-year maintenance plan contract in place that includes semi-annual visits.

Due to the fact that wetland communities surround the mitigation site and elevations were restored to pre-existing contours with no impedance to surface or groundwater flow, we expect that wetland and transition zone restoration will continue to progress and be successful.

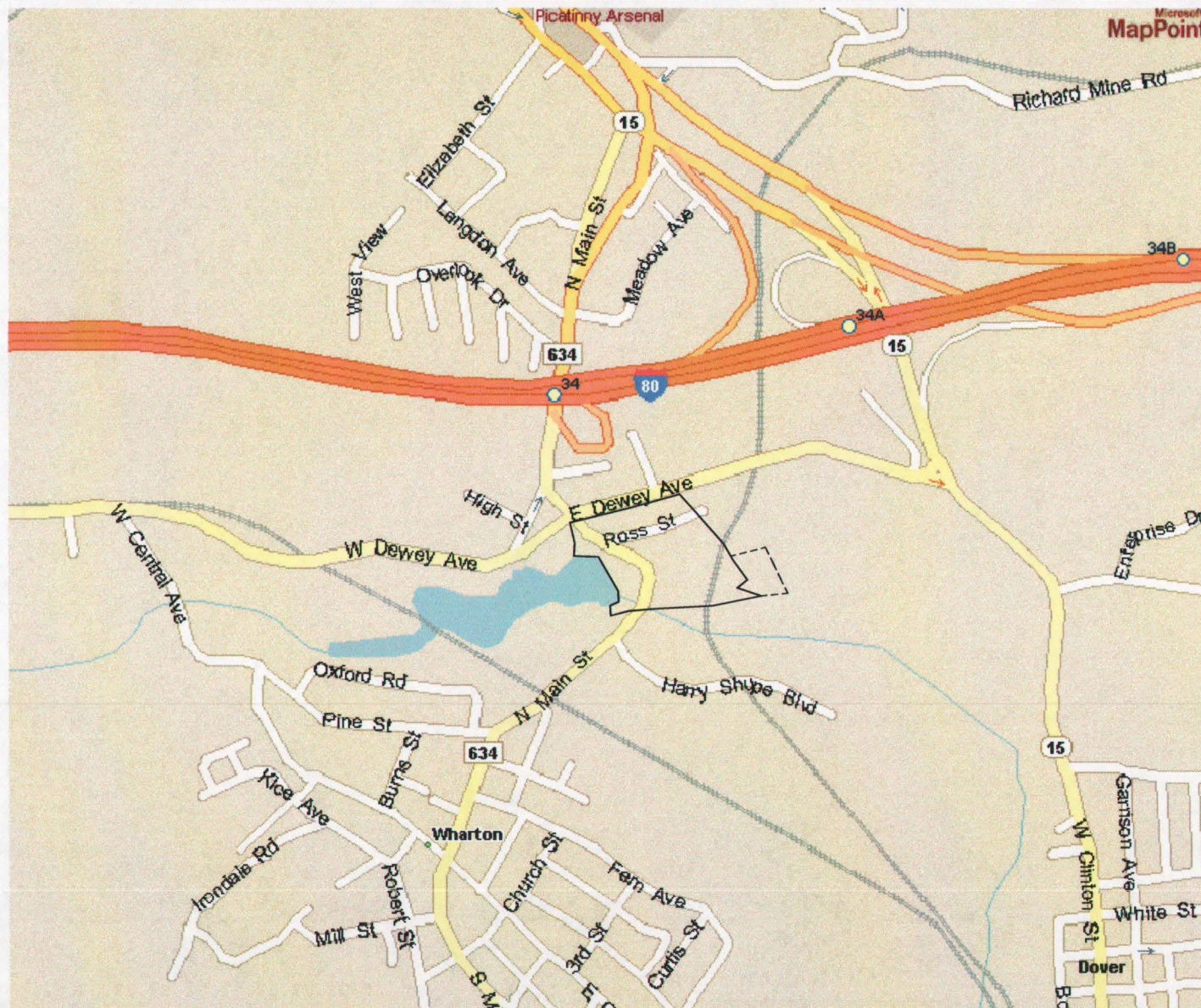
### **REFERENCES**

Gleason, Henry and Arthur Cronquist. 1991. *Manual of Vascular Plants of North-eastern United States and Adjacent Canada*. D. Van Nostrand Company, New York, New York. 910 pp.



# Figures





## LEGEND



- APPROXIMATE PROPERTY BOUNDARY



- EXPANDED PROJECT AREA



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## FIGURE 1 - LOCATION MAP

L.E. CARPENTER  
WHARTON, NEW JERSEY



SCALE: NTS  
DATE: 09.23.04  
FILE: 040229LocationMap





## LEGEND



- APPROXIMATE PROPERTY BOUNDARY



- EXPANDED PROJECT AREA

## NOTES

STATE PLANE COORDINATES -  
754326.58N 470891.83E (NAD83)

SOURCE:USGS DOVER,NJ QUADRANGLE

HUC-14 CODE 02030103030070



11181 Marwill Avenue, West Olive MI 49460  
(616) 847-1680/ Fax (616) 847-9970  
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## FIGURE 2 - USGS MAP

L.E. CARPENTER  
WHARTON, NEW JERSEY



SCALE: NTS

DATE: 12.12.2005

FILE: 040229USGSmap



NOTES

1. AERIAL PHOTOGRAPH PROVIDED BY JAMES M. STEWART, INC. LAND SURVEYORS, DATED 02-14-02.



Plot Time: 1:47.4266 PM  
Attached Xref's: No xref's Attached.  
Operator Name: Lucido  
Scale:

LE CARPENTER  
WHARTON, NEW JERSEY

AERIAL PHOTOGRAPH

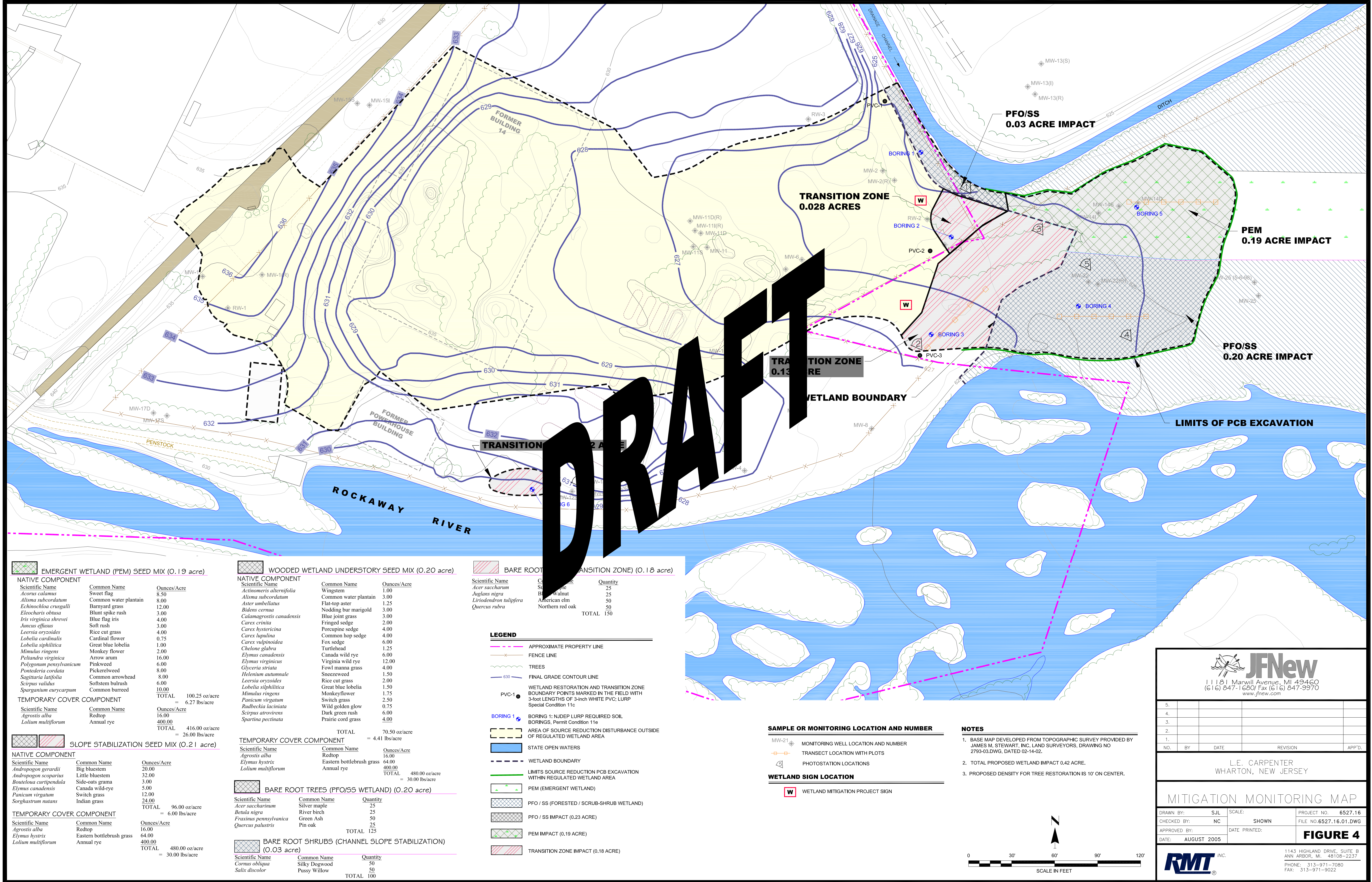
DRAWN BY:	SJL	PROJECT NUMBER:	6527.02
CHECKED BY:	DD	FILE NUMBER:	XSECTIONS.DWG
APPROVED BY:		DATE:	APRIL 2004



1143 HIGHLAND DRIVE, SUITE B  
ANN ARBOR, MI. 48108-2237  
PHONE: 734-971-7080  
FAX: 734-971-9022

FIGURE 3







# Appendices



# **Appendix A: Planting List**



# EMERGENT WETLAND IMPACT AREA (0.19 acre)

## Emergent Wetland Seed Mix (32.27 pounds/acre)

### Native Component

<u>Scientific Name</u>	<u>Common Name</u>	<u>Ounces/Acre</u>
<i>Acorus calamus</i>	Sweet flag	8.50
<i>Alisma subcordatum</i>	Common water plantain	8.00
<i>Echinochloa crusgalli</i>	Barnyard grass	12.00
<i>Eleocharis ovata</i>	Blunt spike rush	3.00
<i>Iris virginica shrevei</i>	Blue flag iris	4.00
<i>Juncus effusus</i>	Soft rush	3.00
<i>Leersia oryzoides</i>	Rice cut grass	4.00
<i>Lobelia cardinalis</i>	Cardinal flower	0.75
<i>Lobelia siphilitica</i>	Great blue lobelia	1.00
<i>Mimulus ringens</i>	Monkey flower	2.00
<i>Peltandra virginica</i>	Arrow arum	16.00
<i>Polygonum pensylvanicum</i>	Pinkweed	6.00
<i>Pontederia cordata</i>	Pickrelweed	8.00
<i>Sagittaria latifolia</i>	Common arrowhead	8.00
<i>Scirpus validus</i>	Softstem bulrush	6.00
<i>Sparganium eurycarpum</i>	Common burreed	10.00
TOTAL NATIVE FORBS AND GRASSES		100.25 = (6.27 lbs/acre)

### Temporary Cover Component

<u>Scientific Name</u>	<u>Common Name</u>	<u>Ounces/Acre</u>
<i>Agrostis gigantea</i>	Redtop	16.00
<i>Lolium perenne</i>	Annual rye	400.00
TOTAL		416.00 = (26.00 lbs/acre)



## **FORESTED/SCRUB-SHRUB IMPACT AREA (0.20 acre)**

### **Wooded Wetland Understory Seed Mix (34.41 pounds/acre)**

#### Native Component

<u>Scientific Name</u>	<u>Common Name</u>	<u>Ounces/Acre</u>
<i>Alisma subcordatum</i>	Common water plantain	3.00
<i>Aster umbellatus</i>	Flat-top aster	1.25
<i>Bidens cernua</i>	Nodding bur marigold	3.00
<i>Calamagrostis canadensis</i>	Blue joint grass	3.00
<i>Carex crinita</i>	Fringed sedge	2.00
<i>Carex hystericina</i>	Porcupine sedge	4.00
<i>Carex lupulina</i>	Common hop sedge	4.00
<i>Carex vulpinoidea</i>	Fox sedge	6.00
<i>Chelone glabra</i>	Turtlehead	1.25
<i>Elymus canadensis</i>	Canada wild rye	6.00
<i>Elymus virginicus</i>	Virginia wild rye	12.00
<i>Glyceria striata</i>	Fowl manna grass	4.00
<i>Helenium autumnale</i>	Sneezeweed	1.50
<i>Leersia oryzoides</i>	Rice cut grass	2.00
<i>Lobelia silphilitica</i>	Great blue lobelia	1.50
<i>Mimulus ringens</i>	Monkeyflower	1.75
<i>Panicum virgatum</i>	Switch grass	2.50
<i>Rudbeckia laciniata</i>	Wild golden glow	0.75
<i>Scirpus atrovirens</i>	Dark green rush	6.00
<i>Spartina pectinata</i>	Prairie cord grass	4.00
<i>Verbesina alternifolia</i>	Wingstem	<u>1.00</u>
TOTAL NATIVE FORBS AND GRASSES		70.50 = (4.41 lbs/acre)

#### Temporary Cover Component

<u>Scientific Name</u>	<u>Common Name</u>	<u>Ounces/Acre</u>
<i>Agrostis gigantea</i>	Redtop	16.00
<i>Elymus hystrix</i>	Eastern bottlebrush grass	64.00
<i>Lolium multiflorum</i>	Annual rye	<u>400.00</u>
TOTAL		480.00 = (30.00 lbs/acre)

### **Native Trees and Shrubs**

<u>Scientific Name</u>	<u>Common Name</u>	<u>Quantity</u>
<i>Acer saccharinum</i>	Silver maple	25
<i>Betula nigra</i>	River birch	25
<i>Fraxinus pennsylvanica</i>	Green ash	50
<i>Quercus palustris</i>	Pin oak	<u>25</u>
TOTAL TREES		125



**DRAINAGE CHANNEL SIDESLOPE IMPACT AREA (0.03 acre)**

**Slope Stabilization Mix (36.00 pounds/acre)**

Native Component

<u>Scientific Name</u>	<u>Common Name</u>	<u>Ounces/Acre</u>
<i>Andropogon gerardii</i>	Big bluestem	20.00
<i>Bouteloua curtipendula</i>	Side-oats grama	3.00
<i>Elymus canadensis</i>	Canada wild-rye	5.00
<i>Panicum virgatum</i>	Switch grass	12.00
<i>Schizachyrium scoparium</i>	Little bluestem	32.00
<i>Sorghastrum nutans</i>	Indian grass	24.00
TOTAL NATIVE GRASSES		96.00 = (6.00 lbs/acre)

Temporary Cover Component

<u>Scientific Name</u>	<u>Common Name</u>	<u>Ounces/Acre</u>
<i>Agrostis gigantea</i>	Redtop	16.00
<i>Elymus hystrix</i>	Eastern bottlebrush grass	64.00
<i>Lolium perenne</i>	Annual rye	400.00
TOTAL		480.00 = (30.00 lbs/acre)

**Native Trees and Shrubs**

<u>Scientific Name</u>	<u>Common Name</u>	<u>Quantity</u>
<i>Cornus amomum</i>	Silky dogwood	50
<i>Salix discolor</i>	Pussy willow	50
TOTAL TREES		100



**TRANSITION ZONE IMPACT AREA (0.18 acre)**

**Slope Stabilization Mix (36.00 pounds/acre)**

Native Component

<u>Scientific Name</u>	<u>Common Name</u>	<u>Ounces/Acre</u>
<i>Andropogon gerardii</i>	Big bluestem	20.00
<i>Bouteloua curtipendula</i>	Side-oats grama	3.00
<i>Elymus canadensis</i>	Canada wild-rye	5.00
<i>Panicum virgatum</i>	Switch grass	12.00
<i>Schizachyrium scoparium</i>	Little bluestem	32.00
<i>Sorghastrum nutans</i>	Indian grass	<u>24.00</u>
TOTAL NATIVE GRASSES		96.00 = (6.00 lbs/acre)

Temporary Cover Component

<u>Scientific Name</u>	<u>Common Name</u>	<u>Ounces/Acre</u>
<i>Agrostis gigantea</i>	Redtop	16.00
<i>Elymus hystrix</i>	Eastern bottlebrush grass	64.00
<i>Lolium perenne</i>	Annual rye	<u>400.00</u>
TOTAL		480.00 = (30.00 lbs/acre)

**Native Trees and Shrubs**

<u>Scientific Name</u>	<u>Common Name</u>	<u>Quantity</u>
<i>Acer saccharum</i>	Sugar maple	25
<i>Juglans nigra</i>	Black walnut	25
<i>Liriodendron tulipifera</i>	Tulip tree	50
<i>Quercus rubra</i>	Red oak	<u>50</u>
TOTAL TREES		150



# **Appendix B: Wetland Data Sheets**



# DATA ENTRY FORM

## MITIGATION WETLAND MONITORING

**Special Site Notes:** Persistent drought conditions throughout 2005 growing season

**Project Number:** 040229

**Project Name/Location:** RMT/New Jersey

**General Site Conditions:** Dry

**Date:** 10-03-2005

**Past and Present Weather:** Sunny, dry

**Hydrology:** Soil moist to dry, no standing water

**Wildlife:** Red-tailed hawk (2 adults with nest), blue jay (1 adult), Canada goose (10 adults), whitetail deer

(4 adults), green frog (1 adult), mourning dove (2 adults), northern flicker (1 adult)

### VEGETATION SAMPLING DATA

#### **Transect 1: Transition Zone**

Plot Number	Species Names	Cover	Plot Number	Species Names	Cover
Plot 1	<i>Barbarea vulgaris</i>	2%	Plot 5	<i>Dactyloctenium aegyptium</i>	19%
	<i>Chenopodium album</i>	1%		<i>Echinochloa crusgalli</i>	42%
	<i>Dactyloctenium aegyptium</i>	9%		<i>Mollugo verticillata</i>	4%
	<i>Echinochloa crusgalli</i>	2%		<i>Panicum sp.</i>	2%
	<i>Lolium perenne</i>	1%		<i>Sambucus canadensis</i>	2%
	<i>Oxalis stricta</i>	2%		<i>Verbascum thapsus</i>	2%
	<i>Poa sp. #1</i>	3%		Bare soil	29%
	<i>Poa sp. #2</i>	17%			
	<i>Polygonum persicaria</i>	2%			
	<i>Setaria glauca</i>	60%			
	<i>Trifolium repens</i>	1%			
Plot 2	<i>Acalypha rhomboidea</i>	1%			
	<i>Dactyloctenium aegyptium</i>	23%			
	<i>Panicum sp.</i>	1%			
	<i>Poa sp.#1</i>	3%			
	<i>Trifolium repens</i>	1%			
	Bare soil	71%			
Plot 3	<i>Dactyloctenium aegyptium</i>	30%			
	Bare soil	70%			
Plot 4	<i>Dactyloctenium aegyptium</i>	78%			
	<i>Setaria glauca</i>	2%			
	Bare soil	20%			



# VEGETATION SAMPLING DATA

## Transect 1: Transition Zone

Inventory:	Species Names	Woody Species Count
	<i>Abutilon theophrasti</i>	<i>Fraxinus pennsylvanica</i> - 1
	<i>Acalypha rhomboidea</i>	<i>Juglans nigra</i> - 3
	<i>Amaranthus retroflexus</i>	
	<i>Ambrosia artemisiifolia</i>	
	<i>Barbarea vulgaris</i>	
	<i>Bidens connata</i>	
	<i>Carex</i> sp.	
	<i>Centaurea maculosa</i>	
	<i>Chenopodium album</i>	
	<i>Cyperus esculentus</i>	
	<i>Dactyloctenium aegyptium</i>	
	<i>Datura stramonium</i>	
	<i>Echinochloa crusgalli</i>	
	<i>Eragrostis cilianensis</i>	
	<i>Euphorbia maculata</i>	
	<i>Fraxinus pennsylvanica</i>	
	<i>Juglans nigra</i>	
	<i>Lolium multiflorum</i>	
	<i>Melilotus</i> sp.	
	<i>Mollugo verticillata</i>	
	<i>Oxalis stricta</i>	
	<i>Panicum</i> sp.	
	<i>Phytolacca americana</i>	
	<i>Plantago major</i>	
	<i>Poa</i> sp. #1	
	<i>Poa</i> sp. #2	
	<i>Polygonum pensylvanicum</i>	
	<i>Polygonum persicaria</i>	
	<i>Potentilla simplex</i>	
	<i>Rubus flagellaris</i>	
	<i>Sambucus canadensis</i>	
	<i>Setaria glauca</i>	
	<i>Solanum nigrum</i>	
	<i>Solidago altissima</i>	
	<i>Trifolium repens</i>	
	<i>Verbascum thapsus</i>	
	<i>Vitis riparia</i>	



# VEGETATION SAMPLING DATA

Transect 2: Emergent Wetland Zone					
Plot Number	Species Names	Cover	Plot Number	Species Names	Cover
Plot 1	<i>Acalypha rhomboidea</i>	3%	Plot 3 (continued)	<i>Oxalis stricta</i>	2%
	<i>Cyperus esculentus</i>	6%		<i>Panicum capillare</i>	24%
	<i>Echinochloa crusgalli</i>	15%		<i>Parthenocissus quinquefolia</i>	2%
	<i>Leersia oryzoides</i>	15%		<i>Phytolacca americana</i>	1%
	<i>Lythrum salicaria</i>	21%		<i>Plantago major</i>	7%
	<i>Oxalis stricta</i>	2%		<i>Rumex crispus</i>	7%
	<i>Phalaris arundinacea</i>	15%		<i>Setaria glauca</i>	11%
	<i>Plantago lanceolata</i>	2%		<i>Solanum nigrum</i>	5%
	<i>Polygonum hydropiperoides</i>	3%		Unknown herbaceous #1	1%
	<i>Polygonum sagittatum</i>	2%		Bare soil	40%
	<i>Rumex crispus</i>	2%			
	<i>Salix</i> sp.	2%	Plot 4	<i>Acalypha rhomboidea</i>	3%
	<i>Toxicodendron radicans</i>	1%		<i>Amaranthus retroflexus</i>	2%
	Unknown herbaceous #1	1%		<i>Chenopodium album</i>	1%
	Bare soil	10%		<i>Dactyloctenium aegyptium</i>	27%
Plot 2				<i>Daucus carota</i>	3%
	<i>Acalypha rhomboidea</i>	2%		<i>Echinochloa crusgalli</i>	9%
	<i>Amaranthus retroflexus</i>	1%		<i>Erechtites hieraciifolia</i>	2%
	<i>Barbarea vulgaris</i>	1%		<i>Oxalis stricta</i>	1%
	<i>Cyperus esculentus</i>	3%		<i>Plantago major</i>	14%
	<i>Dactyloctenium aegyptium</i>	17%		<i>Poa</i> sp. #1	4%
	<i>Eragrostis cilianensis</i>	2%		<i>Polygonum lapathifolium</i>	2%
	<i>Medicago</i> sp.	1%		<i>Polygonum persicaria</i>	3%
	<i>Panicum capillare</i>	26%		<i>Populus deltoides</i>	1%
	<i>Plantago major</i>	11%		<i>Setaria glauca</i>	9%
	<i>Polygonum lapathifolium</i>	3%		<i>Toxicodendron radicans</i>	2%
	<i>Polygonum persicaria</i>	3%		<i>Verbascum thapsus</i>	3%
	<i>Setaria glauca</i>	4%		Bare soil	14%
	Bare soil	26%			
Plot 3					
	<i>Amaranthus retroflexus</i>	6%			
	<i>Bidens connata</i>	6%			
	<i>Dactyloctenium aegyptium</i>	50%			
	<i>Echinochloa crusgalli</i>	27%			
	<i>Glechoma hederacea</i>	3%			
	<i>Medicago</i> sp.	8%			



## VEGETATION SAMPLING DATA

### Transect 2: Emergent Wetland Zone

Plot Number	Species Names	Cover	Plot Number	Species Names	Cover
Plot 5	<i>Amaranthus retroflexus</i>	2%			
	<i>Dactyloctenium aegyptium</i>	14%			
	<i>Echinochloa crusgalli</i>	4%			
	<i>Euphorbia maculata</i>	4%			
	<i>Medicago</i> sp.	3%			
	<i>Panicum</i> sp.	18%			
	<i>Plantago lanceolata</i>	3%			
	<i>Poa</i> sp. #1	11%			
	<i>Polygonum periscaria</i>	1%			
	<i>Populus deltoides</i>	1%			
	<i>Setaria glauca</i>	11%			
	<i>Solanum nigrum</i>	2%			
	<i>Verbascum thapsus</i>	1%			
	Bare soil	25%			
	Plot 6	<i>Acalypha rhomboidea</i>		2%	
<i>Amaranthus retroflexus</i>		1%			
<i>Dactyloctenium aegyptium</i>		15%			
<i>Echinochloa crusgalli</i>		3%			
<i>Euphorbia maculata</i>		4%			
<i>Glechoma hederacea</i>		1%			
<i>Medicago</i> sp.		3%			
<i>Panicum capillare</i>		8%			
<i>Plantago major</i>		8%			
<i>Poa</i> sp. #1		8%			
<i>Polygonum persicaria</i>		8%			
<i>Populus deltoides</i>		1%			
<i>Rhus typhina</i>		1%			
<i>Setaria glauca</i>		9%			
<i>Solanum nigrum</i>		1%			
Unknown herbaceous #2		1%			
Bare soil		26%			



# VEGETATION SAMPLING DATA

## Transect 3: Emergent Wetland Zone

### Inventory:

### Species Names

### Hydrology:

Soil moist from 0-20", saturated at 20"+

*Acalypha rhomboidea*

*Alliaria petiolata*

*Amaranthus retroflexus*

*Aster lanceolatus*

*Barbarea vulgaris*

*Bidens connata*

*Boehmeria cylindrica*

*Carex lacustris*

*Cornus* sp.

*Cyperus esculentus*

*Dactyloctenium aegyptium*

*Echinochloa crusgalli*

*Eragrostis cilianensis*

*Euphorbia maculata*

*Eupatorium rugosum*

*Glechoma hederacea*

*Gleditsia triacanthos*

*Impatiens* sp.

*Juncus effusus*

*Leersia oryzoides*

*Lythrum salicaria*

*Medicago* sp.

*Mikania scandens*

*Oxalis stricta*

*Panicum capillare*

*Panicum* sp.

*Phalaris arundinacea*

*Pilea pumila*

*Plantago lanceolata*

*Plantago major*

*Poa* sp. #1

*Polygonum hydropiperoides*

*Polygonum lapathifolium*

*Polygonum periscaria*

*Polygonum sagittatum*

*Populus deltoides*

*Rhus typhina*

*Rosa palustris*

*Rubus pensylvanicus*

*Rumex crispus*

*Salix* sp.

*Setaria glauca*

*Solanum nigrum*

*Solidago rugosa*

*Toxicodendron radicans*

*Typha angustifolia*

Unknown herbaceous #1

Unknown herbaceous #2

*Verbascum thapsus*



# VEGETATION SAMPLING DATA

## Transect 3: Wooded Wetland Zone

Plot Number	Species Names	Cover	Plot Number	Species Names	Cover
Plot 1	<i>Acer rubrum</i>	7%	Plot 3 (continued)	<i>Dactyloctenium aegyptium</i>	25%
	<i>Bidens cernua</i>	3%		<i>Daucus carota</i>	4%
	<i>Cyperus esculentus</i>	9%		<i>Echinochloa crusgalli</i>	12%
	<i>Dactyloctenium aegyptium</i>	7%		<i>Lythrum salicaria</i>	1%
	<i>Echinochloa crusgalli</i>	19%		<i>Medicago</i> sp.	5%
	<i>Eragrostis cilianensis</i>	33%		<i>Plantago major</i>	12%
	<i>Lythrum salicaria</i>	9%		<i>Poa</i> sp. #1	8%
	<i>Mikania scandens</i>	5%		<i>Polygonum persicaria</i>	5%
	<i>Plantago major</i>	3%		<i>Setaria glauca</i>	8%
	<i>Polygonum hydropiperoides</i>	3%		<i>Verbascum thapsus</i>	1%
	<i>Rhus typhina</i>	2%		<i>Verbena urticifolia</i>	1%
Plot 2			Plot 4	Bare soil	12%
	<i>Amaranthus retroflexus</i>	2%			
	<i>Chenopodium album</i>	2%		<i>Abutilon theophrasti</i>	2%
	<i>Cirsium discolor</i>	2%		<i>Cirsium discolor</i>	5%
	<i>Cyperus esculentus</i>	3%		<i>Cyperus esculentus</i>	3%
	<i>Dactyloctenium aegyptium</i>	34%		<i>Dactyloctenium aegyptium</i>	5%
	<i>Echinochloa crusgalli</i>	4%		<i>Echinochloa crusgalli</i>	10%
	<i>Euphorbia maculata</i>	5%		<i>Panicum capillare</i>	5%
	<i>Lythrum salicaria</i>	1%		<i>Plantago major</i>	15%
	<i>Oxalis stricta</i>	2%		<i>Poa</i> sp. #1	25%
	<i>Panicum dichotomiflorum</i>	7%		<i>Polygonum lapathifolium</i>	2%
	<i>Plantago major</i>	10%		<i>Setaria glauca</i>	2%
	<i>Polygonum hydropiperoides</i>	2%		<i>Solanum nigrum</i>	2%
	<i>Polygonum persicaria</i>	2%		<i>Verbascum thapsus</i>	8%
	<i>Rhus typhina</i>	3%		Bare soil	35%
	<i>Rumex crispus</i>	2%			
	<i>Setaria glauca</i>	4%			
	<i>Verbascum thapsus</i>	5%			
	Bare soil	10%			
Plot 3					
	<i>Acer rubrum</i>	3%			
	<i>Amaranthus retroflexus</i>	2%			
	<i>Bidens connata</i>	1%			



## VEGETATION SAMPLING DATA

### **Transect 3: Wooded Wetland Zone**

[illegible]



# VEGETATION SAMPLING DATA

## Transect 3: Wooded Wetland Zone

### Inventory:

### Species Names

*Abutilon theophrasti*  
*Acalypha rhomboidea*  
*Acer rubrum*  
*Acer saccharinum*  
*Amaranthus retroflexus*  
*Barbarea vulgaris*  
*Betula nigra*  
*Bidens cernua*  
*Bidens connata*  
*Chenopodium album*  
*Cirsium discolor*  
*Cornus amomum*  
*Cyperus esculentus*  
*Dactyloctenium aegyptium*  
*Daucus carota*  
*Decodon verticillatus*  
*Echinochloa crusgalli*  
*Eragrostis cilianensis*  
*Euphorbia maculata*  
*Euthamia graminifolia*  
*Fraxinus pennsylvanica*  
*Impatiens* sp.  
*Leersia oryzoides*  
*Lobelia spicata*  
*Lythrum salicaria*  
*Medicago* sp.  
*Mikania scandens*  
*Oxalis stricta*  
*Panicum capillare*  
*Panicum dichotomiflorum*  
*Penthorum sedoides*  
*Phragmites australis*  
*Pilea pumila*  
*Plantago major*  
*Poa* sp. #1

### Hydrology:

Soil moist from 0-6", saturated from 6"+

*Polygonum hydropiperoides*  
*Polygonum lapathifolium*  
*Polygonum persicaria*  
*Polygonum scandens*  
*Populus deltoides*  
*Potentilla simplex*  
*Quercus palustris*  
*Rhus typhina*  
*Rubus* sp.  
*Rumex crispus*  
*Salix discolor*  
*Saururus cernuus*  
*Setaria glauca*  
*Solanum nigrum*  
*Verbascum thapsus*  
*Verbena urticifolia*

### Woody Species Count

*Acer saccharinum* - 12  
*Cornus amomum* -13  
*Salix discolor* - 2



**Appendix C:  
Photographs of  
Wetland Development**





**Photo 1. View of small forested wetland zone and transition zone from northwest corner of planting area. (Photostation 1)**



**Photo 2. View looking south from ditch toward transition zone. (Photostation 1)**

Site Photographs  
 October 3, 2005  
 L.E. Carpenter & Company  
 Wetland Restoration Area  
 Wharton, Morris County, New Jersey

JFNew # 040229



11181 Marwill Avenue West Olive, MI 49460  
 Phone 616-847-1680 / Fax 616-847-9970  
 www.jfnew.com





**Photo 3. Northeast view of planting area from southwest corner. (Photostation 2)**



**Photo 4. View looking east at emergent wetland zone. (Photostation 3)**

Site Photographs  
October 4, 2005  
L.E. Carpenter & Company  
Wetland Restoration Area  
Wharton, Morris County, New Jersey

JFNew # 040229



11181 Marwill Avenue West Olive, MI 49460  
Phone 616-847-1680 / Fax 616-847-9970  
[www.jfnew.com](http://www.jfnew.com)





**Photo 5. View looking north into emergent wetland zone from wooded wetland zone.  
(Photostation 4)**



**Photo 6. View looking southwest from emergent wetland zone toward wooded wetland zone and transition zone. (Photostation 4)**

Site Photographs  
October 4, 2005  
L.E. Carpenter & Company  
Wetland Restoration Area  
Wharton, Morris County, New Jersey

JFNew # 040229



11181 Marwill Avenue West Olive, MI 49460  
Phone 616-847-1680 / Fax 616-847-9970  
[www.jfnew.com](http://www.jfnew.com)





**Photo 7. View looking southwest at transition zone. (Photostation 5)**



**Photo 8. View looking west at small transition zone area (0.02 acre). (Photostation 6)**

Site Photographs  
October 4, 2005  
L.E. Carpenter & Company  
Wetland Restoration Area  
Wharton, Morris County, New Jersey

JFNew # 040229



11131 Marwill Avenue West Olive, MI 49460  
Phone 616-847-1680 / Fax 616-847-9970  
[www.jfnew.com](http://www.jfnew.com)





**Photo 9. Three downed mature trees along south edge of planting area. (Photostation 4)**



**Photo 10. Two adult red-tailed hawks and nest in tree adjacent to site. (Photostation 1)**

Site Photographs  
October 3, 2005  
L.E. Carpenter & Company  
Wetland Restoration Area  
Wharton, Morris County, New Jersey

JFNew # 040229



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**Appendix D:**  
**NJDEP Permit 1439-04-0001.1**





**State of New Jersey**  
Department of Environmental Protection

Richard J. Codey  
Acting Governor

Bradley M. Campbell  
Commissioner

Land Use Regulation Program  
P.O. Box 439, Trenton, NJ 08625-0439  
Fax # (609) 292-8115  
[www.state.nj.us/dep/landuse](http://www.state.nj.us/dep/landuse)

**FEB 25 2005**

Mr. Nicholas Clevett  
RMT, Inc., Michigan  
2025 E. Beltline Avenue SE, Suite 402  
Grand Rapids, MI 49546

RE: Authorization for Freshwater Wetlands Statewide General Permit No. 4  
File No.: 1439-04-0001.1 (FWW 040001)  
Applicant: L.E. Carpenter & Company  
Block: 301; Lot: 1  
Block: 801; Lots: 3, 4, & 5  
Wharton Borough, Morris County  
Nearest Waterway: Rockaway River  
Passaic River Basin

Dear Mr. Clevett:

The Land Use Regulation Program has reviewed the referenced application for a Statewide General Permit authorization pursuant to the requirements of the Freshwater Wetlands Protection Act Rules at N.J.A.C. 7:7A. The proposed activity is authorized by Statewide General Permit No. 4, which allows regulated activities in freshwater wetlands, transition areas and State open waters for the investigation, cleanup or removal of hazardous substances or pollutants, which are undertaken, authorized or otherwise expressly approved in writing by the Department of Environmental Protection (Department).

Limit of Authorized Disturbance

The approved plans are prepared by RMT, Inc., dated February 21, 2005, last revised February 21, 2005, and entitled:

**"L.E. Carpenter, Wetland and Stream Encroachment Permit Applications, Wharton, New Jersey"**

- "F3 - Wetland Impact Map", Sheet No. F3 of 7;**
- "F4 - Wetland Restoration Plan", Sheet No. F4 of 7;**
- "F5 - Construction Staging and Excavation Plan", Sheet No. F5 of 7;**
- "F6 - Final Grading Plan", Sheet No. F6 of 7;**
- "F7 - Details", Sheet No. F7 of 7**



Based on the approved plans, the authorized activity involves the disturbance of approximately 0.42 of an acre of freshwater wetlands and/or State open waters and approximately 0.19 acres of wetland transition areas for removal of contaminated soil and restoration of the disturbed areas. Any additional disturbance of freshwater wetlands, State open waters or transition areas besides that shown on the approved plans shall be considered a violation of the Freshwater Wetlands Protection Act unless the activity is exempt or a permit is obtained prior to the start of the disturbance from the Land Use Regulation Program.

#### Permit Conditions

The activities allowed by this authorization shall comply with the following conditions. Failure to comply with these conditions shall constitute a violation of the Freshwater Wetlands Protection Act (N.J.S.A. 13:9B-1 et seq.).

#### Special Conditions

1. All regulated activities at this existing Superfund site must be in accordance with the requirements of the Department's Site Remediation Program and the United States Environmental Protection Agency, including any requirements contained within an approved Remedial Action Workplan.
2. In order to protect the trout maintenance and trout stocked waters of the Rockaway River, any proposed grading or construction activities within the banks of this river are prohibited between March 15 and June 15 of each year. In addition, any activity within the 100-year flood plain or flood hazard area of this watercourse which could introduce sediment into said stream or which could cause an increase in the natural level of turbidity is also prohibited during this period. The Department reserves the right to suspend all regulated activities on site should it be determined that the applicant has not taken proper precautions to ensure continuous compliance with this condition.
3. All backfill soils shall consist of clean, suitable material free from toxic pollutants in toxic amounts.
4. In addition to restoration of the wetland transition area as shown on the approved plan entitled "F4- Wetland Restoration Plan", the applicant shall also restore an area of wetland transition area not currently shown on the plan. This area extends 50' from the wetlands on the Wharton Enterprise property. These wetlands are classified as Intermediate resource value. This additional wetland transition area is drawn on the attached map portion. The restoration of this additional area shall be consistent with the notes on Sheet No. F4 of 7.
5. The mitigation project must be conducted prior to or concurrent with the construction of the approved project.



6. Mitigate for the loss of 0.16 acres of emergent wetlands and 0.26 acres of forested and scrub/shrub wetlands through an on-site restoration project as shown on the plan entitled "F4 - Wetland Restoration Plan, L.E. Carpenter, Wetland and Stream Encroachment Permit Applications, Wharton, New Jersey", dated February 21, 2005, last revised February 21, 2005, and prepared by RMT, Inc. In the event there is a conflict between the permit conditions and the approved mitigation plan and proposal the permit conditions take precedent.
7. The permittee shall notify the Land Use Regulation Program, in writing, at least thirty (30) days in advance of the start of construction of the wetland mitigation project for an on-site pre-construction meeting between the permittee, the contractor, the consultant and the Program.
8. The mitigation designer must be present during critical stages of construction of the mitigation project this includes but is not limited to herbicide applications, sub-grade inspection, final grade inspection, and planting inspection to ensure the intent of the mitigation design and their predicted wetland hydrology is realized in the landscape. Mitigation designs are not static documents and changes may be necessary to ensure success of the project. It shall be the prerogative of the mitigation consultant to make changes to the design should field conditions warrant such action.
9. Immediately following final grading of the site, a disc must be run over the site to eliminate compaction. The mitigation designer must be present to oversee this phase of the project and confirm with the Department this activity has occurred prior to planting of the site.
10. Immediately following the final grading of the mitigation site and prior to planting, the permittee shall notify the Program for a post-grading construction meeting between the permittee, contractor, consultant and the Program. The permittee must give the Program at least thirty (30) days notice prior to the date of this meeting.
11. Within 30 days following the final grading and planting of the mitigation project, the permittee shall submit a final report to the Land Use Regulation Program. The final report shall contain, at a minimum, the following information:
  - a. A completed WETLAND MITIGATION PROJECT COMPLETION OF CONSTRUCTION FORM (attached) which certifies that the mitigation project has been constructed as designed and that the proposed area of wetland creation, restoration or enhancement has been accomplished;
  - b. As built plans which depict final grade elevations at one foot contours and include a table of the species and quantities of vegetation that were planted including any grasses that may have been used for soil stabilization purposes;
  - c. Show on the as-built plans that the boundaries of the wetland mitigation area has been visibly marked with 3 inch white PVC pipe extending 4 feet above the ground surface. The stakes must remain on the site for the entire monitoring period;



- d. Photos of the constructed wetland mitigation project with a photo location map as well as the GPS waypoints in NJ state plane coordinates NAD 1983;
  - e. To document that the required amount of soil has been placed/replaced over the entire area of the mitigation site, provide a minimum of 6 soil profile descriptions to a depth of 20 inches. The location of each soil profile description should be depicted on the as built plan as well as provide the GPS waypoints in NJ state plane coordinates NAD 1983;
  - f. Submit soil test results demonstrating at least 8% organic carbon content (by weight) was incorporated into the A-horizon for sandy soil and for all other soil types 12% organic content or if manmade top soil was used it consisted of equal volumes of organic and mineral materials;
  - g. The permittee shall post the mitigation area with several permanent signs, which identify the site as a wetland mitigation project and that mowing, cutting, dumping and draining of the property is prohibited; and
  - h. The sign must also state the name of the permittee, LURP permit number along with a contact name and phone number.
12. If the Program determines that the mitigation project is not constructed in conformance with the approved plan, the permittee will be notified in writing and will have 60 days to submit a proposal to indicate how the project will be corrected. No financial surety will be released by the Program until the permittee demonstrates that the mitigation project is constructed in conformance with the approved plan, all soil has been stabilized and there is no active erosion.
13. The permittee shall monitor the mitigation project for 5 full growing seasons if it is a proposed forested or scrub/shrub wetland and 3 full growing seasons for an emergent wetland or State open water after the mitigation project has been constructed. The permittee shall submit monitoring reports to the Land Use Regulation Program no later than December 31<sup>st</sup> of each monitoring year (All monitoring reports must include the standard items identified in the attachment and the information requested below).
14. All monitoring report will include all the following information (see attached monitoring report checklist):
- a. All monitoring reports except the final one must include documentation that it is anticipated, based on field data, that the goals of the wetland mitigation project including the transition area, as stated in the approved wetland mitigation proposal and the permit will be satisfied. If the permittee is finding problems with the mitigation project and does not anticipate the site will be a full success then recommendations on how to rectify the problems must be included in the report with a time frame in which they will be completed;
  - b. All monitoring reports except the final one must include field data to document that the site is progressing towards 85 percent survival and 85 percent area coverage of mitigation plantings or target hydrophytes (Target hydrophytes are non-invasive native species to the area and similar to ones identified on the mitigation planting plan). If the proposed plant community is a scrub/shrub or a forested wetland the permittee must also demonstrate each year with data that the woody species are thriving, increasing in stem density and height each year. If the field data shows that the mitigation project is failing to meet the vegetation survival, coverage and health goals, the monitoring



report should contain a discussion of steps that will be taken to rectify the problem, including a schedule of implementation;

- c. All monitoring reports except the final one must include documentation of any invasive or noxious species (see below for list of species) colonizing the site and how they are being eliminated. The permittee is required to eliminate either through hand-pulling, application of a pesticide or other Department approved method any occurrence of an invasive/noxious species on the mitigation site during the monitoring period;
  - d. All monitoring reports except the final one must include documentation that demonstrates the proposed hydrologic regime as specified in the mitigation proposal appears to be met. If the permittee is finding problems with the mitigation project and does not anticipate the proposed hydrologic regime will be or has not been met then recommendations on how to rectify the problem must be included in the report along with a time frame within which it will be completed;
  - e. The final monitoring report must include documentation to demonstrate that the goals of the wetland mitigation project including the required transition area, as stated in the approved wetland mitigation proposal and the permit, has been satisfied. Documentation for this report will also include a field wetland delineation of the wetland mitigation project based on techniques as specified in the Federal Manual for Identifying and Delineating Jurisdictional Wetlands (1989);
  - f. The final monitoring report must include documentation the site has an 85 percent survival and 85 percent area coverage of the mitigation plantings or target hydrophytes. The permittee must also document that all plant species are healthy and thriving and if the proposed plant community contains trees demonstrate that the trees are at least five feet in height;
  - g. The final monitoring report must include documentation demonstrating the site is less than 10 percent occupied by invasive or noxious species such as but not limited to *Phalaris arundinacea* (Reed canary grass), *Phragmites australis* (Common reed grass), *Pueraria lobata* (Kudzu), *Typha latifolia* (Broad-leaved cattail), *Typha angustifolia* (Narrowed leaved cattail), *Lythrum salicaria* (Purple loosestrife), *Ailanthus altissima* (Tree-of-heaven), *Berberis thunbergi* (Japanese barberry), *Berberis vulgaris* (Common barberry), *Elaeagnus angustifolia* (Russian olive), *Elaeagnus umbellata* (Autumn olive), *Ligustrum obtusifolium* (Japanese privet), *Ligustrum vulgare* (Common privet) and *Rosa multiflora* (Multiflora rose);
  - h. The final monitoring report must include documentation that demonstrates that the proposed hydrologic regime as specified in the mitigation proposal, which proves the mitigation site is a wetland has been satisfied. The documentation shall include when appropriate monitoring well data, stream gauge data, photographs and field observation notes collected throughout the monitoring period; and
  - i. The final monitoring report must include documentation that the site contains hydric soils or there is evidence of reduction occurring in the soil throughout the delineated wetlands.
15. Once the required monitoring period has expired and the permittee has submitted the final monitoring report, the Program will make the finding that the mitigation project is either a



success or a failure. This mitigation project will be considered successful if the permittee demonstrates all of the following:

- a. That the goals of the wetland mitigation project including acreage and the required transition area, as stated in the approved wetland mitigation proposal and the permit, has been satisfied. The permittee must submit a field wetland delineation of the wetland mitigation project based on the Federal Manual for Identifying and Delineating Jurisdictional Wetlands (1989) which shows the exact acreage of State open waters, emergent, scrub/shrub and/or forested wetlands in the mitigation area;
  - b. The site has an 85 percent survival and 85 percent area coverage of the mitigation plantings or target hydrophytes which are species native to the area and similar to ones identified on the mitigation planting plan. All plant species in the mitigation area are healthy and thriving. All trees are at least five feet in height;
  - c. The site is less than 10 percent occupied by invasive or noxious species such as but not limited to *Phalaris arundinacea* (Reed canary grass), *Phragmites australis* (Common reed grass), *Pueraria montana* (Kudzu), *Typha latifolia* (Broad-leaved cattail), *Typha angustifolia* (Narrowed leaved cattail), *Lythrum salicaria* (Purple loosestrife), *Ailanthus altissima* (Tree-of-heaven), *Berberis thunbergi* (Japanese barberry), *Berberis vulgaris* (Common barberry), *Elaeagnus angustifolia* (Russian olive), *Elaeagnus umbellata* (Autumn olive), *Ligustrum obtusifolium* (Japanese privet), *Ligustrum vulgare* (Common privet) and *Rosa multiflora* (Multiflora rose);
  - d. The site contains hydric soils or there is evidence of reduction occurring in the soil; and,
  - e. The proposed hydrologic regime as specified in the mitigation proposal, which proves the mitigation site is a wetland has been satisfied.
16. If the mitigation project is considered a failure, the permittee is required to submit a revised mitigation plan to rectify the wetland mitigation site. The plan shall be submitted within 60 days of receipt of the letter from the Program indicating the wetland mitigation project was a failure.
17. The permittee shall assume all liability for accomplishing corrective work should the Program determine that the compensatory mitigation has not been 100% satisfactory. Remedial work may include re-grading and/or replanting the mitigation site. This responsibility is incumbent upon the permittee until such time that the Department makes the finding that the mitigation project is successful.

In addition to the above conditions and the conditions noted at N.J.A.C. 7:7A 4.3 and 5.4, the following general conditions must be met for the activity authorized under this Statewide General Permit:

General Conditions:

18. All fill and other earth work on the lands encompassed within this permit authorization shall be stabilized in accordance with "Standards for Soil Erosion and Sediment Control in New Jersey" to prevent eroded soil from entering adjacent waterways or wetlands at any time during and subsequent to construction.



19. This permit is revocable in accordance with DEP regulations and State law.
20. The issuance of this permit shall not be deemed to affect in any way other actions by the Department on any future application.
21. The activities shown on the approved plans shall be constructed and/or executed in conformity with any notes and details on said plans and any conditions stipulated herein.
22. No change in plans or specifications shall be made except with the prior written permission of the Department.
23. The granting of this authorization shall not be construed in any way affect the title or ownership of the property, and shall not make the Department or the State a party in any suit or question of ownership of the property.
24. This permit is not valid and no work shall be undertaken pursuant to this authorization until all other required federal, state, and local approvals, licenses and permits necessary for commencement of work onsite have been obtained.
25. A complete, legible copy of this permit shall be kept at the work site and shall be exhibited upon request of any person.
26. The permittee shall allow the Program the right to inspect the construction site and also shall provide the Bureau of Coastal and Land Use Compliance and Enforcement, NJDEP, 401 East State Street, P.O. Box 422, Trenton, New Jersey 08625 with written notification 7 days prior to the start of the authorized work.
27. This authorization is valid for five years from the date of this letter unless more stringent standards are adopted by rule prior to this date.

#### Transition Area

The wetlands affected by this permit authorization are of Ordinary and Intermediate resource value. The wetland located associated with the drainage channel located along the eastern side of the site are classified as Ordinary resource value. No standard transition area is required adjacent to Ordinary resource value wetlands. The wetlands located on the adjacent Wharton Enterprise property are classified as Intermediate resource value and have a standard required transition area or buffer of 50 feet. In addition, all of the wetlands are classified as priority wetlands by the United States Environmental Protection Agency since they drain into the Passaic River Basin. This General Permit includes a transition area waiver that allows encroachment only in that portion of the transition area that has been determined by the Department to be necessary to accomplish the regulated activities. Any additional regulated activities conducted within the standard transition area shall require a separate transition area



waiver from the Program. Regulated activities within a transition area are defined at N.J.A.C. 7:7A-2.6.

Consistency with the Areawide Water Quality Management Plan

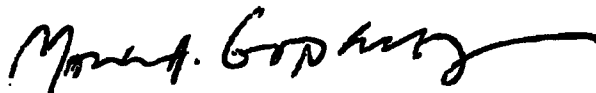
This project has not been reviewed for consistency with the relevant Water Quality Management Plan or Statewide Water Quality Management Planning Rules (N.J.A.C. 7:15). As such, there is no intended or implied approval regarding additional permits which may be required from the Department. For treatment works approvals, the consistency determination will be performed by the Bureau of Engineering and Permitting (North/South) which may be contacted at (609) 292-6894 for North (Middlesex, Hunterdon and Counties north) or (609) 633-1139 for South (Mercer, Monmouth and Counties south). For general information concerning the water quality management planning process, please contact the Division of Watershed Management at (609) 633-1179.

Appeal of Decision

In accordance with N.J.A.C. 7:7A-1.7, any person who is aggrieved by this decision may request a hearing within 30 days of the decision date by writing to: New Jersey Department of Environmental Protection, Office of Legal Affairs, Attention: Adjudicatory Hearing Requests, P.O. Box 402, Trenton NJ 08625. This request must include a completed copy of the Administrative Hearing Request Checklist.

If you have any questions regarding this authorization, please contact Susan Michniewski of our staff at (609) 633-9277. Please reference the above file number.

Sincerely,



Mark A. Godfrey, Supervisor  
Morris & Bergen Counties Region  
Bureau of Inland Regulation

**Attachments (map sketch, mitigation forms)**

- c. Anthony Cinque, Site Remediation Program
- Jodale Legg, Land Use Regulation Program - Mitigation Unit
- Nadine White, Land Use Regulation Program
- Bureau of Coastal and Land Use Compliance and Enforcement
- Wharton Borough Clerk
- Wharton Borough Construction Official
- Wharton Borough Planning Board
- Wharton Borough Environmental Commission